

MR DARWIN ON SEXUAL SELECTION.

The Descent of Man, and Selection in relation to Sex. By Charles Darwin. Murray.

The greater part of Mr Darwin's book is occupied with a detailed exposition of what he calls 'Sexual Selection.' This is a special form of the action of the competitive principle, the prize contended for being not life, but paternity. Natural selection operates chiefly upon the young; sexual selection has no application except to adults. If we take the young of any species as they approach maturity, and when the inferior individuals have been weeded out, the question arises whether all are equally likely to have young, and the same number of young, and thereby have an equal chance of transmitting their peculiarities to their offspring; or whether the principle of competition again comes into play, and some of the species are able, from any cause, to bring into existence a greater number of descendants. For if it should appear that some were able to secure a greater share in the perpetuation of the species, it is obvious that they would be more potent in determining the characters of the race, subject to the overruling influence of natural selection. The solution of this question depends on various considerations. If there be a preponderance of males, some will not be mated, and therefore will be unable to transmit any peculiarities they may possess. So, if there were no inequality in the numbers of the sexes, if the habit of polygamy prevailed, the same effect would be produced. The stronger males would monopolise the function of reproduction.

In the event of a competition arising, from any cause whatever, among the males for the possession of the females, the final result might be determined in one or both of two ways: either the males, having killed or driven off all competitors, would seize the females by sheer force, or, if they could not do so, they would fall back on such charms as they had to induce the females to pair with them. The first mode, designated by Mr Darwin, "The Law of Battle," is well known. A more difficult thing to show is that the females have sufficient taste to exercise any discrimination. Abundant proof, however, is to be found in Mr Darwin's book, which contains a wonderful collection of facts, marshalled with great skill to support the main thesis. Mr Darwin believes that, in consequence of the prevalence of the law of battle, many structures have been developed that are of no service in helping the animal to live, but merely assist it in procuring a mate or mates. He also considers that many of the peculiarities of animals that do not help them in the struggle for existence, but, on the contrary, are occasionally hindrances, such as the bright plumage of birds and the branched horns of deer, arise from the preference by the females for the males having those characters. The scope of "natural selection" is thus enlarged to embrace cases which would otherwise fail to be accounted for; and the origin of many useless structures is explained. Mr St George Mivart seems to agree so far as the plumage of birds is concerned; but he thinks there are cases where the male ape is ornamented, but where he would not suffer the female to exercise any choice. There are, however, more ways than one of disappointing a lover, and if a female monkey, as Mr Mivart says, could not fight the male, if she were very anxious, she might escape from him. "I have, indeed, been assured by M. W. Kowalevsky that the female capercaillie sometimes steals away with a young male who has not dared to enter the arena with the older cocks; in the same manner as occasionally happens with the does of the red-deer in Scotland." Nevertheless, as a general rule, the more the law of battle prevailed, the less influence would the female be able to exercise on the male, and the less would he be improved or beautified by the constant preference shown towards the more attractive. A curious account of courtship by mingled cunning and strength, not unlike some matrimonial experiences, is given on the authority of Captain Bryant, of one of the eared seals, *Callorhinus ursinus*:

As soon as a female reaches the shore, the nearest male goes down to meet her, making, meanwhile, a noise like the clucking of a hen to her chickens. He bows to her, and coaxes her, until he gets between her and the water, so that she cannot escape him. Then his manner changes, and, with a harsh growl, he drives her to a place in his harem. This continues until the lower row of harems is nearly full. Then the males higher up select the time when their more fortunate neighbours are off their guard, to steal their wives. This they do by taking them in their mouths, and, lifting them over the heads of the other females, and carefully placing them in their own harems, carrying them as cats do their kittens. Those still higher up pursue the same method, until the whole space is occupied. Frequently a struggle ensues between two males for the possession of the same female, and both seizing her at once pull her in two, or terribly lacerate her with their teeth. When the space is all filled, the old male walks around, complacently reviewing his family, scolding those who crowd or disturb the others, and fiercely driving off all intruders. This surveillance always keeps him actively occupied.

The males seem to attract the females by the various senses, but especially the higher, smell, hearing, and sight. The crocodile charms his mate by the musky odour emitted during the love-season. The male elephant has a similar power; and some kinds of deer emit very strong odours. But the higher senses are the chief agents in love. The practice of serenading is very ancient; it goes beyond the time of Noah; birds are drawn by it into the meshes of love; but far lower than the birds, in the humble class of spiders, there is a foreshadow of the lyre of Orpheus. The males of several species of *Theridion* have a rudimentary violin upon which they play for the delectation of their females. "The apparatus consists of a serrated ridge at the base of the abdomen, against which the hard hinder part of the thorax is rubbed." The crickets and grasshoppers are famous musicians—albeit, their song is not very agreeable to any but themselves. It is the males alone that are furnished with instrumental music to allure the females. Some fishes have a similar gift; the fishermen of Rochelle assert "that the males (of the Umbrinas) alone make the noise (of drumming) during the spawning time; and that it is possible, by imitating it, to take them without bait." If the croaking of male frogs may be spoken of in connection with music, it deserves notice, and we may believe that it is more pleasing to their females than to us. The vocal powers of birds are too well known to need remark; good observers believe that the female prefers the best singer. "Bechstein, who kept birds during his whole life, asserts 'that the female canary always chooses the best singer, and that in a state of nature the female finch selects that male out of a hundred whose notes please her most.'" In the power of singing the male almost always excels the female, and it is his chief means of inducing her to pair with him.

In like manner, it can hardly be doubted that, in many cases, brilliancy of colour is due to the selection of the most beautiful males by the females. The tests applied by Mr Darwin are these: Is one sex only coloured? Does the colour appear only when maturity is reached? Those tests are satisfied, in the opinion of Mr Darwin, at least so far down as the butterflies. This implies very considerable intelligence in those insects; but they are attracted by the colours of flowers, and are higher in the scale than ants, which are said to possess the power of recognising each other after a considerable time. Mr Darwin believes that fishes have exerted a similar influence, although Mr Herbert Spencer, looking to the small size of their brain, doubts whether they can distinguish any but the broadest colours. The practice of anglers is to employ a great variety of colours, with endless variations and refinements, all of which Mr Spencer thinks absurdly superfluous, and considers that his own experience verifies his opinion. Mr Darwin, however, believes there is a connection between the colours of fishes and their sexual functions, "first, from the adult males of certain species being differently coloured from the females, and often much more brilliantly; secondly, from these same males, whilst immature, resembling the mature females; and, lastly, from the males, even of those species which at all other times of the year are identical in colour with the females, often acquiring brilliant tints during the spawning season." In the case of birds, there appears to be no doubt that the females have sufficient